


**ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM**

**Plant Abstract**

**Element Code:** PDCAC0J0E2  
**Data Sensitivity:** Yes

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Echinomastus erectocentrus* var. *erectocentrus* (Coult.) Britton & Rose  
**COMMON NAME:** Needle-spined Pineapple Cactus, Red-spine butterfly-cactus  
 **SYNONYMS:** *Echinocactus erectocentrus* Coult., *Echinomastus acuíñensis* W.T. Marsh.,  
*Echinomastus erectocentrus* var. *acuíñensis* (W.T. Marsh.) H. Bravo  
*Neolloydia erectocentra* var. *acuíñensis* (W.T. Marsh.) L. Benson,  
*Neolloydia erectocentra* var. *erectocentra* (W.T. Marshall) L. Benson,  
*Sclerocactus erectocentrus* var. *erectocentrus* (Coulter) N.P. Taylor,  
**FAMILY:** Cactaceae

**AUTHOR, PLACE OF PUBLICATION:** *Echinomastus erectocentrus* (J.M. Coult.) Britton & Rose, The Cactaceae; descriptions and illustrations of plants of the cactus family 3: 148. 1922.  
*Echinocactus erectocentrus* J.M. Coulter, Contr. U.S. Nat. Herb. 3(7): 376. 1896.

**TYPE LOCALITY:** Arizona: Cochise County: Near Benson.

**TYPE SPECIMEN:** "Type in Nat. Herb. And in Herb. Coulter. Near Benson, Arizona, and also near Saltillo, Coahuila. Specimens examined: ARIZONA (Evans of 1891); COAHUILA (Weber of 1869)." "It seems so unlikely that this species would be found at such widely-separated stations as Benson, Arizona, and Saltillo, Coahuila, that there must be a suspicion of shifted labels on the part of one of these collectors. Mr. Evans's only Mexican collections are from Chihuahua, just across the Rio Grande from El Paso, and it is barely possible that this plant should bear a Chihuahua label..." Benson, 1982. **Neotype:** POM 273980, L. Benson 10326, April 17, 1940, "east of the junction of U.S. 80 and the road to Sonoita, Pima County, Arizona."

**TAXONOMIC UNIQUENESS:** Three species of *Echinomastus* in Arizona (Mazzoni et al 1982). The species *E. erectocentrus* includes 2 varieties (both occur in Arizona), *E. e.* var. *erectocentrus* and *E. e.* var. *acuíñensis*. The two varieties may not be valid since they are nearly identical and their ranges overlap in Sonora, Mexico (Dr. Don Pinkava pers. comm. 1991). The Arizona populations are disjunct. Kartesz (1994 checklist) recognizes this cactus as a distinct species without varieties. Sometimes this cactus is also placed in the genus' *Echinocactus* or *Neolloydia*.

**DESCRIPTION:** Succulent perennial cactus with solitary stems, ovoid or somewhat cylindroid, 10-15 (37) cm (4-6 [15] in) long, 7.5-13 cm (3-5 in.) in diameter; ribs 15-21, indentations between tubercles are sharp and narrow. Tubercles mammillate, 6 mm broad, and 6 mm long vertically. Spines are dense, obscuring the surface of the stems. Central spines 1 or 2, erect, dark reddish-brown tipped, 12-22 mm long. Radial spines 11-15 per areole, 1.2-1.5 cm in diameter and about 12 mm long, white to red-tinged. Flowers are pink, 3.8-4.5 cm (1.5-1.8 in.) long and in diameter, with bright red stigma lobes. Fruit is green, drying to tan, 10 mm long and 8 mm wide.

**AIDS TO IDENTIFICATION:** *E. e. acuíñensis* has 2-3 central spines; var. *erectocentrus* has 1-2. Benson (1982) states two varieties can be segregated based on size and flower color, but in reality these are not good indicators. Better way to distinguish these two varieties is by geography. Variety *erectocentrus* occurs in the general Tucson area east and south to the

Mexican border. Variety *acuñensis* occurs in northern Sonora, Organ Pipe Cactus National Monument, north and eastward in an arc across Pima and Pinal Counties to the Florence area.

**ILLUSTRATIONS:** Line drawing of spine cluster (Benson 1969:192)  
B&W photo of plant in habitat (Benson 1982:193)  
B&W photo of stem showing erect central spine (Benson 1982:794)  
B&W photo of plant in flower (Benson 1982:794)  
Line drawing (USFWS)  
Color photos (2003, <http://www.mineralarts.com/cactus/needlespine.html>)  
Color photo of plant and habitat (John Ellis, accessed 9/12/2003 from [http://www.teessidecacti.org/BCSS/GALLERY/PICTURES/HABITAT/haaz\\_009.htm](http://www.teessidecacti.org/BCSS/GALLERY/PICTURES/HABITAT/haaz_009.htm))  
Color photos (Accessed 9/12/2003 from [http://www.saguaro-juniper.com/i\\_and\\_i/cacti/barrels/echinomastus.html](http://www.saguaro-juniper.com/i_and_i/cacti/barrels/echinomastus.html))  
Line drawing (*in* Falk and Jenkins et al. 2001)  
Color photos of plant and habitat (AGFD/ANHP, *in* Falk and Jenkins et al. 2001)  
Color photo of specimen collection from DBG (*in* CPC accessed 2003 from [http://ridgwaydb.mobot.org/cpcweb/CPC\\_ProfileImage.asp?FN=2939a](http://ridgwaydb.mobot.org/cpcweb/CPC_ProfileImage.asp?FN=2939a))

**TOTAL RANGE:** Known from Arizona, New Mexico, and Sonora, Mexico.

**RANGE WITHIN ARIZONA:** South-central to southeastern Arizona. Occurs mainly in southeast Pima and western Cochise counties, with a few occurrences along the San Pedro River in southeast Pinal County. Found mainly south and east of Tucson (including the Rincon Valley, Little Rincon Mts., and Santa Rita Mts.), San Pedro River, near Cienega Creek preserve, Empire Mts., and in the Little Dragoon Mts. One recent sighting in the Allen Flat area of the Winchester Mts. Also near Black Hills, 5 miles south of San Manuel (Identified through seeds. Source - Tom Van Devender.)

## **SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Succulent perennial shrub/subshrub.

**PHENOLOGY:** Blooms in April.

### **BIOLOGY:**

**HABITAT:** Found in light-colored gravel on gentle slopes, hills and alluvial fans in upland desert or semi-desert grassland. Also inhabits disturbed areas (e.g. I-10 goes through a population). Habitat of var. *erectocentrus* is not as restricted as with var. *acuñensis*.

**ELEVATION:** 2,850 - 4,960 ft. (869 - 1513 m), based on unpublished records in HDMS - AGFD. Benson 1982 (also in Falk and Jenkins et al. 2001), report elevation range from 3,000 to 4,300 ft (915-1312 m). CPC (accessed 2003) reports elevations of 1,300-2,000 ft (397-610 m).

**EXPOSURE:** East, south, and west.

**SUBSTRATE:** Found in light-colored gravel, of felsic volcanics, granite, or limestone (Mineralarts.com 2003). Alluvial soils with rock and gravel cover over sandstone conglomerate; also limestone.

**PLANT COMMUNITY:** Arizona Upland Subdivision of the Sonoran Desertscrub and Semi-desert Grassland. Dominant associated species are: *Allionia incarnata* (trailing allionia), *Aristida purpurea* (purple three-awn), *Cercidium microphyllum* (foothill paloverde), *Coryphantha* spp., *Dyssodia* spp., *Erioneuron pulchellum* (fluff grass), *Fouquieria splendens* (coachwhip ocotillo), *Larrea divaricata* ssp. *tridentata* (creosote bush), *Opuntia phaeacantha* (prickly-pear cactus), *Prosopis velutina* (velvet mesquite), *Psilostrophe cooperi* (Cooper paperflower), *Yucca angustissima* (fineleaf yucca), and *Zinnia pumila*.

Additional associates include: *Abutilon incanum* (Indian mallow), *Acacia constricta* (whitethorn acacia), *Agave palmeri* (Palmer agave), *Agave schottii* var. *schottii* (Schott agave), *Baccharis sarathroides* (desert broom), *Calliandra eriophylla* (fairy duster), *Celtis pallida* (desert hackberry), *Dasyllirion wheeleri* (Wheeler dasyllirion), *Echinocereus fasciculatus* var. *fasciculatus* (bundle hedgehog cactus), *Ephedra trifurca* (long-leaved joint fir), *Ferocactus wislizenii* (fishhook barrel cactus), *Haplopappus tenuisectus* (burweed), *Hibiscus denudatus* (rock hibiscus), *Kramaria parvifolia* (range ratany), *Lysium* sp. (desert thorn), *Mammillaria grahamii* var. *grahamii* (Graham pincushion cactus), *Mendora scabra* (yellow menodora), *Muhlenbergia porteri* (bush muhly), *Opuntia engelmannii* var. *engelmannii* (Engelmann prickly-pear cactus), *Opuntia fulgida* var. *fulgida* (chain-fruit cholla), *Parthenium incanum* (mariola), *Yucca arizonica* (Arizona yucca), *Yucca elata* (soaptree yucca), *Yucca thornberi* (Thornber yucca), *Zinnia acerosa* (desert zinnia), and *Zizyphus obtusifolia* var. *canescens* (greythorn).

**POPULATION TRENDS:** Unknown. Known from Arizona, New Mexico, and Sonora (Mexico), from perhaps several dozen sites altogether (NatureServe 2003). No monitoring of plants or studies being done. Problems are trampling, over construction (Ducote 1994).

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None (USDI, FWS 1996).  
[C2 USDI, FWS 1993]  
[C2 USDI, FWS 1990]  
[C2 USDI, FWS 1985]  
[LT USDI, FWS 1975]

**STATE STATUS:** Salvage Restricted (ARS, ANPL 1999)  
[Salvage Restricted (ARS, ANPL 1993)]

**OTHER STATUS:** Forest Service Sensitive (USDA, FS Region 3 1990, 1999)  
Most Critically Endangered (CITES: Appendix I 1983)  
Rare in AZ (intermediate NM and Mexico), IUCN 1998

**MANAGEMENT FACTORS:** Primary threats include collection for cactus trade, and habitat degradation due to urbanization. Although it may be collected, it is not common in cultivation because it is considered difficult to propagate.

### **CONSERVATION MEASURES TAKEN:**

**SUGGESTED PROJECTS:** Studying aspects of this species general biology and ecology would be useful. Population size and sites need to be determined, including potential

habitat in Whetstone and Empire mountains. Genetic studies would be helpful to answer taxonomic questions.

**LAND MANAGEMENT/OWNERSHIP:** BLM – Safford Field Office; State Land Department; TNC – Lower San Pedro River Preserve; Private.

## **SOURCES OF FURTHER INFORMATION**

### **REFERENCES:**

- Arizona Revised Statutes, Chapter 7. 1993. Arizona Native Plant Law. Appendix A: 5.
- Arizona Revised Statutes, Chapter 7. 1993. Arizona Native Plant Law. Appendix A: 5.
- Benson, L. 1981. The cacti of Arizona. University of Arizona Press. Tucson. Pp. 190-192.
- Benson, L. 1982. The cacti of the United States and Canada. Stanford University Press. Stanford. Pp. 792-794.
- Center for Plant Conservation (CDC). CDC National Collection Plant Profile, *Echinomastus erectocentra* var. *erectocentra*. Accessed: 9/12/2003 from [http://ridgwaydb.mobot.org/cpcweb/CPC\\_ViewProfile.asp?CPCNum=2939](http://ridgwaydb.mobot.org/cpcweb/CPC_ViewProfile.asp?CPCNum=2939).
- Ducote, D. 1994. Bureau of Land Management, Safford District, Rare Plant Workshop. November 14-16. Tucson, Arizona.
- Falk, M., P. Jenkins, et al; Arizona Rare Plant Committee. 2001 Arizona Rare Plant Guide. Published by a collaboration of agencies and organizations. Pages unnumbered.
- Integrated Taxonomic Information System (ITIS). Retrieved 9/12/2003 from ITIS, <http://www.itis.usda.gov>.
- Kearney, T.H., R.H. Peebles with collaborators. 1951. Arizona flora. Second edition with supplement by J.T. Howell, E. McClintock and collaborators. 1960. University of California Press, Berkeley. Pp. 574.
- Mazzoni, J., L.T. Green III, A.M. Phillips III, B.G. Phillips, and N. Brian. 1982. Status report on *Neolloydia erectocentra* var. *erectocentra*. Prepared for US Fish and Wildlife Service, Albuquerque, New Mexico. p. 11
- Missouri Botanical Garden – TROPICOS, Nomenclatural Data Base. *Echinomastus erectocentrus* (J.M. Coult.) Britton & Rose. [http://mobot.mobot.org/cgi-bin/search\\_vast](http://mobot.mobot.org/cgi-bin/search_vast). Accessed: 12 Sep 2003.
- NatureServe. 2003. NatureServe Explorer: An online encyclopedia of life [web application]. Version 1.8. Arlington, Virginia. Available: <http://www.natureserve.org/explorer>. (Accessed: September 12, 2003).
- USDA, Forest Service Region 3. 1990. Regional Forester's Sensitive Species List.
- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.
- USDA, NRCS. 2002. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
- USDI, Fish and Wildlife Service. 1975. Threatened or Endangered Fauna or Flora. Federal Register 40(127): 27829.
- USDI, Fish and Wildlife Service. 1985. Endangered and Threatened Wildlife and Plants; Review of Plant Taxa for Listing as Endangered or Threatened Species. Notice of Review. Federal Register 50(188): 00037.
- USDI, Fish and Wildlife Service. 1990. Endangered and Threatened Wildlife and Plants; Review of Plant Taxa for Listing as Endangered or Threatened Species; Notice of Review. Federal Register 55(35): 6215.
- USDI, Fish and Wildlife Service. 1993. Plant Taxa for Listing as Endangered or Threatened

Species; Notice of Review. Federal Register 58(188): 51177.  
USDI, Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants:  
Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or  
Threatened Species; Notice of Review; Proposed Rule. Federal Register 61(40): 7596-  
7613.

**MAJOR KNOWLEDGEABLE INDIVIDUALS:**

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Tom Van Devender - Arizona-Sonora Desert Museum, Tucson, Arizona.

**ADDITIONAL INFORMATION:**

Dr. Don Pinkava (pers comm 1991) believes var. *acuñensis* may be indistinct from var.  
*erectocentrus*.

When searching for this cactus, Benson (1982) reports "The reddish-spined cylindroid stems  
are hidden among grasses during the summer rainy season, but they are more conspicuous at  
other times of the year."

<b>Revised:</b>	1980-xx-xx (ANHP)
	1991-11-11 (SR)
	1994-12-07 (DBI)
	1997-10-22 (SMS)
	2003-10-09 (SMS)

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